later this is replaced by psychical blindness (Seelenblindheit). The dog avoids obstacles in walking, but does not recognize any previously familiar object. It therefore follows that the cortical area is not the seat of sensation, but in it the sensations are perceived, compared, mentally arranged, and remembered. The function of the cortex is to elaborate psychically the visual sensations which take place in the mesencephalic ganglia.

2. The auditory area is located in the temporal lobe, each ear being connected with both hemispheres. Disturbances of hearing may be caused by lesions in the adjacent parts of the parietal and frontal lobes, and in the cornu ammonis, but these are not permanent. Psychical deafness follows extirpation of both temporal lobes, but absolute deafness is not permanent.

3. The seat of the olfactory area is in the gyrus hippocampi and cornu ammonis, but also extends into the temporal lobe.

4. The location of gustatory sensations is not determined, but is probably near that of the olfactory.

5. The sensations of touch are perceived in the central convolutions, and therefore lesions of these cause anæsthesia as well as paralysis. The tactile area includes the parietal convolutions also, but does not reach the occipital or temporal lobes.

All the sensations appear to have a common zone in the parietal region, and lesions in this common zone may cause disturbance of all the senses.

It will be seen from this review that Luciani confirms the experiments of Munk, as opposed to Goltz. It is also to be noted that all experimenters except Ferrier now agree that the motor and tactile areas coincide to a great extent. The position held by Ferrier that tactile sensations are perceived in the cornu ammonis, has not been confirmed either by experiment or by pathological observation, and may be abandoned. It is probable that in experimenting on the cornu ammonis Ferrier wounded the tegmentum of the crus, which lies so near to it, and in which pass the sensory tracts, and that for this reason his conclusions were fallacious. M. ALLEN STARR, M.D., Ph.D.

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b.—PHYSIOLOGY OF THE NERVOUS SYSTEM.

THE INFLUENCE OF THE NERVOUS SYSTEM UPON RIGOR MORTIS.—Dr. A. von Gendre has made a series of experiments upon this subject in the Physiological Institute at Munich. Dr. A. von Eiselsberg, for several years, had made experiments upon this subject in the Institute. In animals killed by bleeding, a blow, or through woorari, he cut the sciatic in one leg immediately after death, and noted when the rigor mortis took place in each posterior extremity. In 72.4 per cent. of the cases, the rigor mortis ensued earlier in the leg whose sciatic was intact—that is, the nervous system accelerated the rigidity of death. Dr. von Gendre used frogs. An incubator was kept constantly at a tempera-

ture of 30° to 35° C. In this a glass cylinder was placed, in which the dead frog was hung. To prevent dryness, a wet sponge was placed at the bottom of the glass cylinder. In the first series of experiments, the frogs were killed by a subcutaneous injection of cyanide of potassium, and then the sciatic of one leg was divided. In 72.2 per cent. of the cases, the nervous system was found to accelerate the appearance of the rigor mortis. In a second series of experiments, the animals were killed by cyanide of potassium, and one of the sciatics divided. To eliminate the influence of the nervous system, the brain and spinal cord were destroyed. In nearly all, the appearance of rigidity was the same in both extremities. After eliminating the frogs killed by destroying the spinal cord, or by strychnia, or by woorari; there was no difference in the appearance of the rigor mortis. He also made experiments upon white rats, killed by bleeding. In all these animals, the rigidity of death came on earlier in the limb with the sciatic intact.—*Pflüger's Archiv*, Band xxxv., Heft 1 and 2.

THE BRAIN.—Herr Christiani has made a series of experiments upon this subject, on rabbits and dogs.

Of the higher respiratory centres, he found three in the basal ganglia. First, an inspiratory one, chiefly reflex, at the bottom of the third ventricle; second, an inspiration-centre, at the section between the anterior and posterior corpora quadrigemina; third, an expiratory- and inhibitory-centre at the entrance of the aqueduct of Sylvius. He also discovered, anterior to the inspiratory-centre in the third ventricle, a co-ordination-centre for the equilibrium. If the cerebral hemispheres are removed, so that bleeding does not ensue, and the animal, after the operation, is released, the temperature is still at the normal height; but if the centres in the optic thalami are extirpated, the temperature in animals who live falls from 3° to 5° C. in the first quarter of an hour. In a three-year-old dog, he removed the brain to the optic thalami; the animal lived a few hours. He observed here the inspiration- and expiration-centre in the third ventricle and the anterior corpora quadrigemina, as in rabbits. The reflex activity of the pupil and eyelids was retained, as was that of hearing. Rabbits, with the cerebrum removed, can evade obstacles, although not always elegantly, for the circulatory conditions of the retina are changed.—*DuBois' Arch.*, 1884, 4 and 5 Heft.

THE BRAIN.—Prof. Munk read a reply to the preceding paper of Herr Christiani. It is well known that Prof. M. found extirpation of certain parts of the hemispheres was followed by blindness. Not long after this discovery, Herr C. found that rabbits whose cerebrum was removed both saw and heard. Munk has repeated the experiments of Christiani on rabbits, and arrived at the conclusion that animals, from whom the cerebrum was removed, did not avoid obstacles, but were completely blind, and made no spon-